

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : DeMarcken et al. Art Unit :  
Continuation of Serial No.: 09/244,905 Examiner :  
Filed : February 4, 1999  
Title : METHOD AND APPARATUS FOR PROVIDING AVAILABILITY OF AIRLINE SEATS

Commissioner for Patents  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as follows:

In the claims:

Cancel claim 1-27.

Add claim 28-55.

28. A method executed in a travel planning system for providing a predicted answer in response to a seat availability query from a user, the method comprising:

- storing queries and answers from previously completed seat availability queries in a availability predictor cache database;
- determining by the availability predictor, whether a stored query matches the user's seat availability query;
- retrieving an answer, if any, from the cache database corresponding to the stored query matching the seat availability query;
- determining by the availability predictor, whether the retrieved answer is not stale; and if the retrieved answer is not stale:
- returning the retrieved answer or answers, if any, as the predicted answer to the user's seat availability query;

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if the retrieved answer is stale, sending an actual availability query to an airline availability system that includes a revenue management algorithm and inventory management system;

returning the actual answer received from the airline availability system to the user; and  
storing the actual answer and query in the cache database of the availability predictor.

29. The method of claim 28 wherein storing queries includes storing one or more query fields for airline name, flight number, origination, destination, date of query, traveler nationality, point of purchase, frequent flyer status and seller data.

30. The method of claim 28 wherein storing answers further comprises:  
storing one or more answer fields for booking codes and booking counts; and  
assigning a data parameter to the stored answer wherein assigning includes one or more parameters for time, date, source and user characteristics.

31. The method of claim 29 wherein determining whether a stored query matches the user's seat availability query further comprises:  
parsing the availability query into query fields; and  
matching the query fields of the availability query to the query fields stored in the cache database.

32. The method of claim 31 wherein matching further comprises:  
exactly matching the query fields in the availability query to the query fields of a query stored in the cache database.

33. The method of claim 31 wherein matching further comprises:  
approximately matching the query fields in the availability query to at least some of the query fields of a query stored in the cache database.

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34. The method of claim 30 wherein determining whether the retrieved answer is not stale further comprises:

- retrieving a time parameter corresponding to the retrieved answer; and
- comparing the time parameter to a threshold time, the threshold time being a preset time period.

35. The method of claim 30 wherein determining whether the retrieved answer is not stale further comprises:

- retrieving a time stamp parameter corresponding to the retrieved answer;
- determining a threshold time; and
- comparing the time stamp parameter to the threshold time.

36. The method of claim 35 wherein determining a threshold time further comprises:

- determining a threshold time according to one or more query factors, said query factors including a date of a flight, an origin of a flight, a destination of a flight, a time of flight, a day of week per flight, a size of the airplane, an actual answer to a completed query that matches the seat availability query and an actual answer to a completed query that does not match the seat availability query.

37. The method of claim 28 wherein returning the retrieved answer or answers, if any, as the predicted answer to the user's seat availability query further comprises:

- determining that the retrieved answer from the cache database is stale;
- returning the retrieved answer as the predicted answer where the predicted answer includes a confidence factor corresponding to the predicted answer; and
- accepting the predicted answer, or not, based on the confidence factor.

38. The method of claim 37 wherein the confidence factor indicates the answer to the seat availability query is based on an actual answer received in response to an actual availability query.

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39. The method of claim 37 wherein the confidence factor indicates the answer to the seat availability query is true or false to indicate availability, or not, of a predicted answer in the cache database.
40. The method of claim 37 wherein the confidence factor indicates the answer to the seat availability query is within a certain estimated probability.
41. The method of claim 37 wherein the confidence factor indicates a qualitative measure of seat availability.
42. The method of claim 37 wherein returning the retrieved answer as the predicted answer including a confidence factor corresponding to the predicted answer further comprises:  
predicting the confidence factor from previously completed seat availability queries in response to a request for a confidence factor.
43. The method of claim 42 wherein predicting produces a confidence factor according to a model using historical booking data as a factor in the model.
44. The method of claim 43 wherein the historical booking data includes one or more categories for booking rates according to flights, booking rates according to families of flights sold on different dates, booking rates according to aircraft capacity, booking rates based on labor strikes, booking rates according to sales or other booking rates based on extraordinary events.
45. The method of claim 42 wherein predicting produces a confidence factor according to a model using as a factor in the model a threshold time, which if lapsed, indicates that the retrieved answer is considered stale.
46. The method of claim 45 wherein the threshold time varies over the lapsing of time.
47. The method of claim 45 wherein the threshold time is a pre-set time.

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48. The method of claim 45 wherein the threshold time is a pre-set time approximately equal to the time an airline is expected to adjust parameters effecting seat availability distributions per booking code.

49. A method of providing a seat availability prediction in response to a seat availability query, the query including one or more fields that specify at least one of points of travel, dates of travel, times of travel, class of travel, or booking code comprises:

accessing a table of data entries according to a query factor from the availability query, with each dimension of the table corresponding to at least one query factor; and

retrieving a stored data entry as an answer corresponding to a seat availability query.

50. The method of claim 49 wherein the query includes a field for airline and the query factors include one or more query factors for airline, booking code and days-before-departure.

51. The method of claim 49 wherein the answer corresponds to a yes/no value.

52. The method of claim 49 wherein the answer corresponds to a number of available seats.

53. The method of claim 49 wherein the answer corresponds to a number of available seats by booking code.

54. The method of claim 49 wherein the answer corresponds to a probability of seat availability.

55. The method of claim 49 wherein the answer corresponds to a qualitative measure of seat availability.

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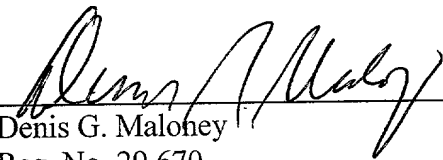
REMARKS

Applicant asks that all claims be examined. Enclosed is a transmittal of a new continuation application. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: \_\_\_\_\_

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